Upper Mississippi River Basin Association
Water Quality Task Force Meeting
September 11-12, 2007
Dubuque, Iowa

Meeting Summary

Participants

Gregg Good	Illinois EPA
Matt Short	Illinois EPA
John Olson	Iowa DNR
Marvin Hora	Minnesota PCA
Mohsen Dkhili	Missouri DNR
Jim Baumann	Wisconsin DNR
John Sullivan*	*Wisconsin DNR
Bill Franz	U.S. EPA Region 5
Holly Arrigoni	U.S. EPA Region 5
Larry Shepard	U.S. EPA Region 7
Dave Bolgrien	U.S. EPA-ORD, Duluth
Dale Robertson	USGS-Wisconsin Water Science Center
Hank DeHaan*	USACE-Rock Island
Holly Stoerker	UMRBA
Dave Hokanson	UMRBA
Andy Lindstrom†	USEPA-RTP
Shoji Nakayama†	USEPA-RTP
Mark Strynar†	USEPA-RTP
Paul Hoff†	Minnesota PCA
Laura Solem†	Minnesota PCA
David Christianson†	Minnesota PCA

* September 11th only.
**September 12th only.
†Via phone September 12th for PFC monitoring discussion.

Call to Order

The Water Quality Task Force (WQTF) meeting was called to order by Jim Baumann at 12:40 p.m.

Meeting and Agenda Overview

Dave Hokanson previewed the agenda of the WQTF meeting and noted that the presentation by Hank DeHaan would be moved up in the agenda in order to best accommodate DeHaan's schedule.

Designated Uses Project Overview

To introduce DeHaan's presentation, Hokanson provided a brief summary of the status of the "designated uses" project. He reminded the WQTF of the question posed by this project: "Should there be a unique set of designated uses for the UMR?", and noted the actions taken to date to move forward on the project as follows: 1) identification of the Chesapeake Bay approach as a possible model for addressing aquatic life use designations, 2) development of a project proposal by UMRBA staff and approval of this proposal by the WQTF and WQEC, and 3) review and compilation of background materials as provided in the packet for this meeting.

Habitat Classifications for the UMR and Use of UMR Ecosystem Objectives

DeHaan provided a presentation regarding the incorporation of ecosystem objectives and habitat categories into the work of the U.S. Army Corps of Engineers' Environmental Management Program (EMP). He noted that EMP is in the process of ecosystem objectives and targets that can help direct its ecosystem restoration and monitoring activities.

DeHaan described the categorization of the UMR being considered by the EMP as follows:

- Seven landscape habitats, with three being terrestrial (forest, grass/prairie, and island), one transitional (wetland), and three aquatic (backwater, side channel, and main channel).
- Ten geomorphic reaches on the UMR (plus two on the Illinois River). These reaches are the same as those presented in the Cumulative Effects Study (aka WEST report) published in 2000 by USACE. *(Note: A comparison of these reaches to the 13 consensus assessment reaches can be found in Appendix 2 of UMRBA's issue paper on sediment-related water quality criteria. See* http://www.umrba.org/wq/sed2007rpt.pdf, *page 73.)*

DeHann noted that EMP is working to be as consistent as possible with the Goals and Objectives being developed by the Science Panel of the Navigation and Ecosystem Sustainability Program (NESP), which will likely be the Corps' primary ecosystem restoration program in the future.

Baumann asked whether each ecosystem restoration project undertaken by the Corps needed to meet all of the proposed Goals and Objectives. DeHaan replied that the Goals and Objectives provide a "menu", and an individual project will meet a subset of the overall list. Dave Bolgrien asked what the spatial scale was for the Goal and Objectives, and how they were understood at a programmatic level. DeHaan responded that they were developed at the geomorphic reach and pool scale, but are applied to individual projects. Matt Short asked whether any project-specific monitoring is done to evaluate project effectiveness. DeHaan replied that this type of monitoring is becoming more prominent.

DeHaan next walked through an example of how UMRS ecosystem objectives could be applied in the appropriate measurement of water quality in backwaters and in evaluating the success of EMP projects.

Hokanson asked how current data collection, under the Long Term Resource Management Program (LTRMP) was matched up to the data needs for the approach DeHaan had described. DeHaan replied that this type of data was currently being collected in the LTRMP study pools, but not necessarily system-wide. Hokanson noted that one of the challenges will be filling in the blanks on the charts displayed by DeHaan, where specific parameter values have not yet been identified.

Mohsen Dkhili asked if the wetlands being considered by EMP were those currently in existence or potentially those created in the future. DeHaan replied that the approach could be applied in either case. Dkhili further asked if wetlands were going to be acquired as part of EMP restoration efforts. DeHaan answered that wetlands would not be acquired under EMP, but that this could potentially happen under NESP.

Hokanson asked if the habitat types could be mapped and if this had already been done in a standing, easily-accessible format. DeHaan answered that the mapping had been done and that existing Land Cover Mapping could be referenced for this purpose.

Baumann asked if the 5 mg/l dissolved oxygen level listed in DeHaan's slide would apply uniformly or would be different in different areas of the UMR. DeHaan replied that the value may need to be adjusted to reflect site-specific conditions. Baumann further asked how states' buy-in to the EMP water quality goals would be obtained. DeHaan indicated that the Corps would work with EMP project partners on this.

John Olson asked whether the approach being described would actually be brought to implementation in prioritizing projects. DeHaan indicated that it is intended to be used to aid the process of prioritizing projects.

Holly Stoerker asked how this approach seeks to identify segments of the river that are meaningful, and how separations are made between aquatic areas. DeHaan replied that planning is done at multiple scales, including both the system and reach scale.

Baumann asked whether the "main channel" habitat included just the navigation channel. DeHaan answered that the main channel habitat included both the navigation channel and the main channel border. Baumann noted that the UMR was the only river Wisconsin has that includes a navigation channel.

Good asked what the timeframe was for implementing the approach DeHaan had described. DeHaan indicated that workshops would be held in early 2008. Good further asked if any of the targets would be promulgated in a regulatory sense. DeHaan answered that the targets would be considered more of a design criteria. Stoerker added that her interpretation would be that these objectives only drive ecosystem restoration and are not tied into the states' regulatory programs.

DeHaan explained that land cover maps are currently available that display 1989 data and that mapping is currently being done to display data from 2000. He added that not a large degree of change (about 5-10%) occurred in land use over that time period and that most of this change was in the terrestrial categories.

Larry Shepard observed that the level of complexity to be employed in evaluating the condition of the river needs to be carefully considered, as including too much detail may impede the utility of an evaluation approach. He added that certain activities, such as island building, are known to generally have beneficial impacts, and so there may not be a lot of value in developing complex methods of evaluation.

Olson noted that a certain level of detail and complexity is desirable in quantifying outcomes. DeHaan added that the Corps has discussed these tradeoffs as well, and that the Corps' primary interest is to be able to evaluate on a system-wide basis.

Baumann observed that developing too many categories can quickly lead to complexity. Good noted that the discussions among the states have primarily centered on the main channel habitat.

US EPA Region 5 Concerns Regarding Habitat-Specific Designated Use Project

Holly Arrigoni and Bill Franz reported some concern on the part of Region 5 Water Division staff, including the Region 5 standards coordinator, regarding the development of aquatic life use subcategories. Marvin Hora asked why, if this was the case, States were being pushed toward a tiered aquatic life use model in their standards generally.

Shepard noted that this may be concern about potential "backsliding" of standards. Baumann suggested that there might be concerns about different criteria applying in different locations on the river, as well as the potential for lowering criteria in some cases.

Arrigoni noted the Tim Henry, Linda Holst and Dave Pfeifer are individuals to be engaged in this conversation, and reported the concern that the Chesapeake Bay approach may not be the most appropriate. Hokanson acknowledged that concern about simply adopting the Chesapeake Bay approach, but characterized Chesapeake Bay as starting point for developing a UMR approach. Short noted that there are not a lot of applicable models in existence giving guidance on how to apply water

quality standards in a large river system that is also maintained for navigation, adding that there is a need for better tools to be developed to address this situation.

Hokanson noted that Art Spratlin (US EPA Region 7 Water Division Director) has been supportive of this project and has even been engaged in trying to find staff support for the effort.

Baumann suggested that if Pfeifer and others were reluctant about the Task Force's approach, then they should be involved in future WQTF meetings. Good commented that, in general, EPA has a preference for methodologies that keep waters on the impairment list as opposed to methodologies that could conceivably lead to de-listing of waters.

Arrigoni reported some skepticism within Region 5 that this type of effort could actually be implemented. Baumann replied that the task would be made easier by starting with existing use categories, rather than starting from scratch.

Discussion of Habitat-Specific Designated Uses Project

Hokanson noted that, even in light of Region 5's reservations, it is still important to discuss what the WQTF would like to see happen in regard to designated uses and potential habitat-specific use subcategories.

Franz asked whether the WQTF would like to have more involvement with EMP, as had been presented by DeHaan. Good replied that keeping the conversation open would be important. Short asked how critical water quality goals really were to the Corps' programs. Franz asked whether state water quality staff should be more involved with the Corps. Stoerker cautioned against too much direct involvement, and suggested that it is better for the WQTF to consider whether the habitat classifications discussed by DeHaan can be of aid in the designated use effort in which the WQTF is currently engaged. Baumann added that he would see value in remaining engaged in the Corps conversations.

Hokanson asked whether there was too much complexity in the Corps approach, and whether a habitat-classification for CWA consideration was indeed achievable. Bolgrien commented that the classification system could be simplified by collapsing categories and the implementation was indeed possible. Short observed that a critical question was what water quality criteria would be protective of the various habitat categories, and that it was not clear whether the Corps was developing criteria or asking others to do so.

Good suggested focusing on the main channel as a first place to look at habitat requirements and implications for water quality standards. Stoerker asked why this would be the approach if the diversity of habitats included side channels and backwaters. Hora suggested that starting in the main channel may be advantageous simply because it may be the simplest. Shepard suggested that the best test in approach is determining whether it can provide a better description of the River's characteristics and needs for protection. Short pointed out that, without data to evaluate, there is not a great motivation to develop the distinctions.

Shepard stated that "subcategories" may not be the best description or approach, and that it may be best to think about the UMR as unique. Bolgrien added that an IBI could be developed that is specific to the UMR.

Good observed that Illinois assesses the Great Lakes in three different categories, an approach that may not be dissimilar to what is being considered here. Baumman concurred, indicating that there is an acceptance of looking at Lake Michigan in a similar way. He added that one advantage may be in determining where proposed SAV-protection criteria might apply.

Hokanson noted that the terminology of "subcategories" was specifically included in the project proposal because: 1) it is the terminology that was used by the Chesapeake Bay program and 2) in the May 2007 WQTF meeting, states appeared to be reluctant to create a stand-alone aquatic life use category for the UMR.

Hokanson next distributed a document that compared the current approach to uses (as well as criteria, monitoring and assessment) on the UMR to a possible future state where habitat-specific subcategories are employed on the UMR. He noted that this approach to designated uses has direct implications for criteria, monitoring and assessment, and that it may limit the usefulness of exploring habitat-specific subcategories if there is not an interest in also revisiting criteria, monitoring and assessment. Baumann characterized the document as an example to generate discussion and not a concrete proposal. Hokanson added that it would be important for the WQTF to consider, upon looking at this example, whether it appeared that better protection of the River would likely result from this approach.

Good provided an example from the Illinois River, where CWA assessment also focuses on the main channel. The assessment did not find water quality problems on the Illinois River, which was an apparent discrepancy with the desire of the Illinois DNR to do restoration on the Illinois River (presumably more focused on backwaters).

Shepard raised the question of whether moving to a habitat-driven approach might actually allow for better use of LTRMP data. Olson replied that this was a possibility in the long run, but that CWA indicators would need to be developed for habitat categories such as backwaters. Shepard acknowledged there would be a "growing period" and it would be important to consider if all the existing criteria would be carried along into a new framework. Olson emphasized that there can definitely be an improvement in how the states implement the CWA on the UMR.

Good suggested that it might be possible to use "assessment guidelines" as an approach for improving consistency. Baumann noted that, if the UMR is going to be treated differently, then a different assessment approach may be needed. Hora added that Minnesota does not have an issue with looking at the habitat-based subcategories, and he again suggested starting work on the main channel.

Bolgrien commented that EMAP data can address conditions in the main channel, and that LTRMP data can provide information regarding backwaters and side channels. Short commented that States would need to adopt the EMAP methodology in order to make use of EMAP data. Baumann asked when EMAP data would be available for review/use. Bolgrien replied that EMAP data should be available in approximately 9 months. Dkhili indicated that it may be most productive to begin with work in the main channel, and then branch out to side channels and backwaters.

UMR Basin Nutrient Contributions (SPARROW Model)

Dale Robertson of the USGS Wisconsin Water Sciences Center gave a presentation covering the development and outputs of the Spatially Referenced Regression on Watershed Attributes (SPARROW) model in regard to nutrient contributions to the Mississippi River from watersheds within its basin.

Robertson indicated the model had been developed by Rich Alexander (USGS, Reston, Virginia) and then adapted to the Mississippi River. He further described the model as a hybrid statistical and mechanistic model that uses data from 400 to 500 sites. Robertson added that recent improvements to the model have increased its accuracy by approximately 20%.

Dkhili asked whether the model was transferrable to other basins. Robertson answered that it was possible to calibrate the model for other similar-sized basins, but that a large amount of data would be needed to calibrate the model.

Robertson described the sources of nutrients in the model as follows: urban/population sources, atmospheric nitrogen, agricultural fertilizer, animal manure, and other residual sources. He also described factors affecting land to water delivery of nutrients in the model as: climate, soils, topography, and artificial drainage. Robertson added that in-stream decay coefficients are also used.

Robertson indicated that the primary use of the model's output is to identify watersheds that are contributing the largest amount of nutrients to the Gulf of Mexico. He noted that the leading sources of nitrogen inputs appear to be corn and soybean production, followed by atmospheric nitrogen contribution. Robertson pointed out that, for phosphorus, the most prominent sources appear to be non-captured manure (from pasture/rangeland), and then corn and soybean production. However, he added that the predominance of the contribution from non-captured manure may need to be revisited.

Robertson stated that total nitrogen loading to the Gulf is approximately 1.4 billion kilograms annually and that approximately 400 million kilograms are contributed by the top 100 HUC-8 watersheds. He also noted similar, but not identical, relative contributions from top watersheds to phosphorous loading.

Robertson next described the variety of SPARROW models currently being developed or used, including a national SPARROW model (led by Alexander), a Midwest SPARROW model (led by Robertson), and a UMR SPARROW model (led by Alexander and Robertson).

Robertson noted the following as improvements to be made in SPARROW models in the future:

- Better spatial resolution
- Further reduction in biases
- Better definition of source terms
- Improved ability to address regional and local conditions

Robertson noted that the model had initially used just NASQAN sites, but had now added large amounts of monitoring data from STORET, increasing the number of data sites nearly eight times (from 134 to 889 sites in the UMR basin). He added that this increase in data has greatly improved the calibration of the model.

Dkhili asked how the model would account for change in flow regime that might be associated with climate change. Robertson replied that this would require going back to initial steps in the model and re-simulation of flow regime.

Robertson noted that biases in the national SPARROW model likely lead to an under-estimation of loads in the UMR's middle –Mississippi area, and that further development of a regional SPARROW model should help address some of these biases. He added that regional modeling can also help answer questions such as what the effects of increased ethanol production will be on water quality.

Olson noted that the outcome of the current SPARROW modeling appears to be different in that Iowa's overall contribution appears to be less than in earlier estimates. Robertson concurred with this observation, but added that the model may be under-estimating Iowa's contribution.

Good asked whether the model took into account natural (non human-induced) soil loss and naturally occurring soil fertility. Robertson replied that this model did not incorporate these factors, but other models may address these issues. Bolgrien asked if the model could take into account changes in flow through UMR pools. Robertson answered that the model could not accommodate these changes as it took a steady-state, long-term equilibrium approach. Short asked whether the model incorporated sediment transport. Robertson answered that it did not at this time, but indicated that this might be included in the future.

Hokanson asked Robertson and EPA representatives to comment on who the consumers of the model are, and how the model relates to the work of the Hypoxia Task Force, UMRSHNC, and others. Robertson answered that USGS and US EPA are the primary funders of the effort and that they are interested in the ranking of the basins by nutrient contribution. He added that the model is also of interest to the states.

Franz noted that US EPA would be interested in using this kind of information to work with the NRCS and States in targeting watersheds for further focused work. He added that this type of modeling is also useful in breaking out point source vs. non-point source contributions, and in identifying prominent point source contributors.

Shepard asked Robertson if the model fully addressed instream nutrient loss. Robertson replied that it does this best when working at the HUC-8 level, but may not work as well at the level of smaller basins.

Summary of May 2007 Water Quality Task Force Meeting

Hokanson noted that the summary of the May 2007 WQTF meeting had been approved via email, but that he and Baumann were aware of some potential followup questions from the meeting. Baumann opened the floor to any potential questions regarding the meeting or meeting summary.

Shepard inquired regarding the status of the Annadale-Maple Lake case in Minnesota. Hora replied that the state (MPCA) had prevailed in its appeal to the Minnesota Supreme Court, with the court upholding the right of the state to use discretion in permitting and to interpret federal regulations in its role as the agent of the US EPA. Hora added that another recent case may compel MPCA to develop water quality-based effluent limits, even though a TMDL is not yet in place.

Meeting adjourned for the day at 5:10 p.m., and resumed at 8:05 a.m. on Wednesday, September 12th.

Recent Activities of WQEC and UMRBA Board

Hokanson provided a brief summary of recent actions of the Water Quality Executive Committee (WQEC) and UMRBA Board related to water quality as follows:

- The WQEC and the UMRBA worked together on a Governors' statement regarding UMR water quality, which was signed by all five UMR Governors on August 2, 2007. A copy of the statement is available on the UMRBA website at: http://www.umrba.org/wq/jtgovwq8-07.pdf.

- The UMRBA Board approved a "status quo" water quality budget for FY 08, which carries the implication that no new UMRBA water quality staff will be hired in the near future.

- The UMRBA Board has decided to phase the UMRBA out of its involvement in the development of an early warning monitoring system for the UMR. This decision was based in part on feedback from the WQEC that the UMRBA water quality efforts should focus on the "basics" of the Clean Water Act at this time.

- All five states contributed $17,000 to UMRBA water quality efforts in FY 07 via their "water quality assessments." Two states so far have paid these assessments for FY 08.

- In considering requests for reimbursement of water quality-related travel, the WQEC would like those seeking reimbursement to notify UMRBA in advance so that available reimbursement funds may be best managed to avoid exceeding the travel reimbursement budget.

- The WQEC is continuing its efforts to establish an ongoing source of federal funding for UMRBA water quality activities.

Good asked whether the WQEC was still seeking $200,000 as its federal funding target. Hokanson replied that this was still the amount being requested by the WQEC, though it was not necessarily a "magic number" and some variation in future requests/actual amount determined could be expected. Baumann asked where funding would potentially be placed within EPA's budget. Stoerker responded that the request made to date is that it be placed in the "other geographic priorities" section of EPA's budget.

Interstate Assessment and Listing Consultation

Missouri's Listing Methodology

Dkhili provided a presentation focusing on the importance of assessment methodologies in ultimately determining impairment listings. He emphasized that progress in interstate consistency could possibly be made by focusing on methodology, so that similar data would more likely produce similar results in terms of assessments and listings between states. Dkhili characterized methodology as potentially "low hanging fruit" in improving consistency.

Dkhili noted that Missouri uses the five assessment categories recommended by US EPA, with those waters in Category 5 being placed on the list of impaired waters. He added that "threatened waters" will appear in Category 4A, 4B, or 5 and that volunteer monitoring data may be used to indicate a trend toward impairment. Olson asked why the category of 3B was used to indicate waters with "some evidence of impairment." Dkhili replied that this was a possibility.

Dkhili described data used by Missouri as originating from sources including: Missouri DNR, Missouri DOC, US EPA, USGS, USFS, USDA/NRCS, and the University of Missouri. Baumann asked about the use of volunteer data, with Dkhili replying that it is used to identify trends. He next described data as falling into four categories, with Level 4 representing the highest quality data and that any data more than seven years old requires justification before it can be used. Good asked if listing decisions could only be based upon Level 3 or Level 4 data. Dkhili referred the group to Missouri's methodology document to answer this and other detailed questions. He indicated that he would provide the group with an electronic copy of this document.

Dkhili next referenced text in the methodology document indicating that the 303(d) listings of other states should be reviewed in the development of Missouri's 303(d) list. However, he emphasized that the language simply required review and did not require Missouri to match other states' listings.

Missouri's burden of proof approach was next described by Dkhili as follows:

- For human health related criteria, the burden of proof is in showing that the water is not impaired.
- For other criteria, the burden of proof is in showing that the water is impaired.

Dkhili noted the following likely changes to Missouri's 2008 methodology:

- Change in the number of Missouri UMR assessment reaches from three to five to match the UMRBA consensus assessment reaches.
- Addition of fish egg data to fish tissue data to be used in developing fish consumption advisories.
- PCB action level for fish consumption advisories reduced from 2 mg/kg to 0.75 mg/kg. Also, reduction in the lead action level from 0.3 mg/kg to a value at or near zero.

Hokanson acknowledged Missouri's change to match consensus interstate assessment reaches. He also asked whether any of the upcoming methodology changes would be likely to affect the listing for the UMR in Missouri. Dkhili replied that the PCB level change may affect listings in some streams, but not on the UMR (note: a PCB-related TMDL is already in place for Missouri's portion of the UMR). He

added that if lead level goes to zero, Herculaneum smelter area might be affected, but there would be no load to allocate in a TMDL. Dkhili also noted that Missouri's methodology is currently on public notice.

Hokanson returned to Dkhili's earlier suggestion that methodology is "low hanging fruit" for improving interstate consistency. He asked Dkhili to comment further on this idea. Dkhili replied that unless data is processed and analyzed in similar ways by the states, the end determinations made from the data will not be in agreement. He added that methodology may also be "low-hanging fruit" in the sense that typically only a few individuals in state programs are involved in developing methodology, so that it may be easier to reach agreement. Hora asked if Missouri could change its methodology without changing its rules, adding that Minnesota's methodology is not in rule.

Hokanson asked whether the other states felt that methodology might be a place to look for improved consistency. Olson commented that it did not seem to necessarily be "low-hanging fruit."

Robertson raised a question regarding Missouri's approach to burden of proof, indicating that an assumption of "impaired until proven otherwise" (for human health related criteria) can be problematic when a variety of data sources are used. Dkhili commented that if the overall assumption is that waters are not impaired, it would be more difficult to obtain monitoring funds. Robertson added that it is important to use the most consistent data possible, and that volunteer data should not be used for determining trends. Shepard commented that volunteer data may be all the data that is available in some cases. John Sullivan clarified that Missouri may simply be using such data to look at overall conditions and not a trend analysis in a statistical sense. Dkhili concurred that this is the case.

Dkhili concluded by showing the group a summary of UMR fish tissue data for PCBs and chlordane.

Wisconsin

Baumann indicated that Wisconsin is working on a methodology for integrated reporting, which may be ready in approximately one year, and then promulgated in administrative rules in 2-5 years.

For Wisconsin's 2008 listing cycle, Baumann reported that the additions of listings related to suspended sediments and nutrients were likely. Specifically, he reported that a listing related to Wisconsin's uppermost UMR reach was likely, although it had not yet been determined how to specifically express this impairment, such as in terms of lack of submerged aquatic vegetation (SAV) or by other measures. Baumann also stated that nutrient-related listings associated with backwaters of Pools 4 and 8 were likely to move forward, adding that these are areas where data is available to evaluate backwater condition. He further noted that the nutrient impairment will likely be described as combination of exceedances of numeric (pH and DO), and well as narrative criteria. Finally, Baumann stated that there would not be an effort to interpolate data between pools, something that had been discussed by WI DNR in the past.

Baumann commented that an issue paper is being prepared by Caroline Betz of WI DNR describing these potential new listings for 2008, but that he has not yet seen the issue paper. He noted that information regarding the proposed listing will be shared with Minnesota and Iowa, but that if there are to be no new listings below Pool 8 there will actually not be a direct impact on waters bordering Iowa.

Regarding Wisconsin's list in general, Baumann indicated that a draft 2008 list should be available for the WQTF meeting in January 2008, with availability for public review likely in April 2008.

Bolgrien asked if the nutrient listing would be associated with whole pool or just the backwater, further observing that this seems to be along the lines of the habitat-specific categorizations being discussed by the WQTF. Baumann replied that the intent is to make the listing as explicit as possible, but added that

this additional specificity in the listing may not affect resulting management decisions. Bolgrien replied that this indeed seems to speak to the need for a backwater designated use. Baumann answered that the process is evolving but that the Executive Committee's desire to examine uses makes sense and that subcategories may indeed end up being appropriate.

Hokanson added that since the WQTF has previously expressed that it does not want to hold any states back, it makes sense that Wisconsin is proceeding as it sees appropriate even if the designated use effort has not been completed. Baumann concurred, adding that it may take years for all the pieces to be in place to build up from the examination of designated uses.

Olson asked how the proposed Wisconsin listings would specifically appear in the 303(d) list. Baumann replied that the SAV/suspended solids listing would affect the whole of Wisconsin's upper UMR reach (St. Croix River to Chippewa River) and the nutrient/pH/DO listing would be associated with Pool 4 and 8 backwaters.

Hokanson asked if Wisconsin's PCB and mercury listings would remain unchanged. Baumann replied that these listings would not change.

Minnesota

Marvin Hora reported that Minnesota's 303(d) list will go on public notice as of October 8, 2007. Hora next discussed PFC detections below Brainerd on the Mississippi River within Minnesota and PFC-related fish consumption advisories for UMR Pools 2-6. He added that impairment listings are only triggered when the fish consumption advisory is at the level of one meal per month.

Other items of note in the proposed 2008 Minnesota list highlighted by Hora included:

- First pesticide listing in the UMR basin, a listing associated with acetochlor in tributaries to UMR.
- First listing of an international waterbody, which is a lake with toxic algae that results in off-gassing of hydrogen sulfide in excess of emissions standards.
- First listing of wetlands/ditches.
- Removal of 432 waters due to completed mercury TMDL.

Hokanson asked whether the mercury listings should be removed from the UMR as a result of the completion of the statewide mercury TMDL. Hora replied that the UMR listing should remain in place.

Hora clarified that there are no phosphorous listings for rivers in Minnesota, and that all of the state's phosphorous listings are associated with lakes, including Lake Pepin.

Illinois

Gregg Good reported that Illinois is considering listing DO, sulfate, and chloride as a cause of impairment in some areas. He reported that, more generally, changes to water quality standards are being considered and discussed with US EPA, adding that it is possible that DO will not be considered a pollutant.

Short noted that changes in UMR listings were not anticipated in 2008. Dkhili asked whether US EPA Region 7's approval of Missouri's PCB TMDL for the UMR would have any effect on Illinois listing of PCBs as causing impairment. Good replied that he could check with Bruce Yurdin on this. Good added that it was not yet clear if Illinois would be considering a PFC-related listing for the UMR.

Sullivan asked whether Illinois would list an impairment if Pool 13 LTRMP data indicated one. Good and Short both observed that this was a possibility, but that it was complicated by the fact that pH and

DO are not directly discharged, but rather are indicators, so it is not clear how a TMDL would be applied in a situation where pH and DO are driving the impairment.

Iowa
Olson reported that Iowa is still working with US EPA on its 2006 list, and has not yet officially submitted it to US EPA for approval.

For the 2008 cycle, Olson noted that assessments have not yet begun, but that he did not anticipate changes for the UMR from the 2006 to 2008 lists. Olson commented that no objections had been received to Iowa's matching of Illinois' listing for fecal coliform bacteria on the UMR, even though Iowa does not have a fecal coliform criterion and is therefore listing "indicator bacteria" as the cause of the impairment.

Baumann commented that he had looked into Wisconsin's rationale for not listing aluminum, as Iowa has been planning to use Wisconsin's data to support an aluminum-related listing. He stated that Wisconsin had reviewed the EPA study used to evaluate aluminum toxicity and noted that pH was extremely low in the study. Wisconsin's view was that the pH was likely the driver of toxicity in this study, and therefore Wisconsin informed US EPA Region 5 that it would not be promulgating a criterion for aluminum (and therefore would not have aluminum-related listings). Olson added that Iowa's criterion for aluminum is 0.4 ppm. He also noted that there is a possibility that the arsenic criteria may be revised as part of a larger review of standards.

Missouri
Dkhili re-iterated that Missouri is still working on revisions to its methodology. He commented that there may be changes to PCB and chlordane criteria, but that there is already a TMDL in place for these pollutants on the UMR. Dkhili noted that Missouri will begin using E. coli as its indicator of bacterial contamination in 2008. He added that Missouri will also be considering a nutrient criterion for lakes, which may be relevant for the UMR in regard to backwaters in the 2008 cycle.

Dkhili noted that Missouri's 2004-2006 list had been approved at the state level and was being reviewed by US EPA.

US EPA Region 5
Region 5 offered no comments regarding ongoing 305(b) assessments and 303(d) listings.

US EPA Region 7
Shepard suggested that the states consider a UMR-specific section within their assessment methodologies that would facilitate a more consistent approach to the UMR. Dkhili replied that perhaps US EPA should be responsible for the development of such a methodology and perhaps impairment listings as well. Baumann asked whether ORSANCO had a listing methodology to which Good replied that ORSANCO has an assessment methodology for the Ohio River. Shepard further observed that 305(b) and 303(d) processes are not the same, but really should be. He added that one striking distinction in how states approach listings is that some states will assert that listing is not possible without numeric criteria in place, while others will proceed with listing in the absence of numeric criteria.

State members of the WQTF generally expressed frustration with the differences between 305(b) and 303(d) processes, but also indicated that they are not in a position to make major changes in the short term. Baumann noted that Wisconsin is examining this issue, but is receiving pressure both from groups advocating change and those opposing change.

Mississippi River PFC Sampling

Andy Lindstrom, Mark Strynar and Shoji Nakayama of US EPA-RTP joined the meeting via conference call for a discussion of recently-collected perfluorochemical (PFC) samples. Also joining via conference call were Paul Hoff and Laura Solem of MPCA.

Andy Lindstrom provided background on the sampling project, characterizing it as an effort to better develop methods to analyze for PFCs (PFOA and PFOS) in water samples collected throughout a large-scale watershed.

Lindstrom described issues that were encountered early in the effort with samples from Minnesota and Wisconsin where there was significant (30-40%) loss of PFOS in travel spikes. He explained that this issue was subsequently resolved by rinsing bottles to extract material that had plated out, but that the results of these early samples would not be accurate and would represent a lower bound on the actual concentrations present.

Lindstrom further explained that, because of the uncertainty regarding Minnesota and Wisconsin results, the data could not be shared as a full set that packaged together results from all three participating states (Illinois, Minnesota, and Wisconsin).

Overall, Lindstrom characterized the effort as a success in that much was learned about sampling technique and that at least some of the results were accurate. He expressed an interest in carrying out further sampling of this type in the future.

Sullivan asked Lindstrom to explain further the plating issue and how the problem was resolved during Illinois sampling. Lindstrom answered that, at low concentrations, plating of some material to the bottle appeared to be an issue. He explained that 3 rinses were needed to fully recover the material from the bottle.

Hora asked if Lindstrom could provide some general description of the results for Minnesota and Wisconsin. Lindstrom replied that most of the results from Minnesota and Wisconsin samples were in the range of 10 ng/l, with the highest result being 50 ng/l. Hora commented that Minnesota's PFOS guideline is 6 ng/l. Lindstrom replied that many results were above 6 ng/l.

Sullivan asked Lindstrom what the percentage of samples was without a detection. Lindstrom replied that less than 10% of the samples, and likely closer to 5%, were without a detection of PFCs. He added that the analytical method used is fairly sensitive, so that it is rare to have no detection whatsoever.

Good asked if there was a trend of steadily declining results as the river flowed downstream. Shoji Nakayama and Lindstrom replied that concentrations increased in Twin Cities area, then decreased and leveled out to the range of 10 ng/l throughout Illinois, with some increase near the confluence with the Illinois River.

Hora asked if Minnesota should repeat its sampling. Lindstrom replied that it might be preferred to target potential problem areas in the next round of sampling rather than repeating the geographically broad sampling effort already done. He added, however, that he was open to states re-sampling if they saw fit.

Sullivan expressed that it would be important to have more details about the initial sample results before deciding on any next steps. Good added that some kind of sampling results summary was needed. Lindstrom replied that he would plan to work with individual states to review the results of their sampling and re-emphasized that EPA could not release the results as a group due to some of the issues

experienced in the sampling process (i.e. loss in recovery on travel spikes). Lindstrom added that each state should contact him to discuss their results.

The conference call ended at this point.

Bolgrien observed that the upcoming national rivers assessment may provide an opportunity to revisit some of this sampling. Hora commented that even the limited amount of information provided indicates a need for more data to be collected. Baumann suggested that the WQTF hold a conference call once each state has had an opportunity to discuss their result with Lindstrom.

Designated Use Discussion: Next Steps

Hokanson presented a summary of the opinions expressed by the WQTF members during the preceding day's discussion regarding designated uses. He then asked the members to respond to his summary and provide their opinions on what seemed to be logical next steps.

Hora suggested that efforts begin with main channel, adding that even though the concept is actually broader, work on the main channel would be a tactical choice allowing progress to be made most easily.

Good commented that he saw more of a difference in assessments that uses per se, that he would characterize the approach as assessing aquatic life use in separate ways for separate habitats. Shepard noted that the uses would actually likely be subcategories of the aquatic life use.

Baumann noted that he did not perceive the effort as expanding the number of designated uses, but rather creating subcategories within existing uses and that such subcategories would only be used where they were needed. He added that, as an example, an SAV protection subcategory might only apply in certain areas of the UMR.

Baumann further expressed an interest in examining Knox's geomorphic reaches, an idea that had been discussed by DeHaan the preceding day.

Baumann commented that starting with the main channel might be an acceptable approach, but ultimately the lateral diversity of the river, including side channels and backwaters must be addressed. He added that it was not clear at this point whether new criteria would result from the investigation of designated uses, and that the long term nature (5-10 years) of the project would need to be kept in mind.

Arrigoni reported that she had spoken with Pfeifer (Region 5 standards coordinator) since the previous day's discussion and noted that the following were among his concerns regarding the designated use project:

- The WQTF may be "getting ahead of the data" by potentially ending up with different criteria for different waterbody types.
- It was not clear to him what problem the WQTF was trying to address by looking at designated uses.
- Criteria for toxics are not amenable to tiered approaches.

Arrigoni added that she let Pfeifer know that the WQTF was just at the exploratory stage, so some of these concerns may not be as relevant at this point. Hokanson concurred that the WQTF was at an early stage, but added that these kinds of issues would very likely be part of the discussion of designated uses.

Sullivan commented that there is adequate information available to begin moving forward, primarily using LTRM program strata and data.

Good commented that he did not necessarily see new uses arising from this investigation, but rather new assessment approaches. He added that he felt it would be important to first synchronize assessment approaches.

Baumann noted that it did not appear that there was a clear vision in the group at this point, and that the WQTF shouldn't be trying to determine the eventual outcome at this point in the process.

Dkhili commented that work in the main channel made sense, but he was not sure how homogenous the side channels and backwaters were, and how amenable for interstate approaches they would be, in that the main channel is the truly shared portion of the waterbody.

Shepard proposed a stepped approach where, for example, a UMR aquatic life use subcategory would be added to the warm water fishery (or similar) use categories already existing in the states' standards.

Good re-iterated that the states should begin by assessing the same aquatic life use in the same way, and then move toward sub-dividing if needed.

Short asked whether, if a backwater was impaired, the entire reach it was associated with would then be impaired. Olson concurred that this was one of the issues to be addressed and that the designated use effort would not only be focused on improving consistency, but would be a way to better assess the UMR. He added that one question to be answered is whether current criteria are appropriately protecting the desired aquatic life uses in various areas of the river.

Good commented that the "first vision" document drafted by Hokanson implies that multiple criteria and multiple assessments would result from pursuing the examination of designated uses. Hokanson concurred, noting that this first attempt to capture potential outcomes was modeled on projecting an outcome for the UMR similar to that seen on the Chesapeake Bay.

Short commented that is was appropriate to keep moving forward in an attempt to "build the boxes" that may be used to create potential aquatic life use subcategories for the UMR. He added that there would need to be just a limited, manageable number of boxes, perhaps 2, 3, or 4, not an overwhelming number. Short explained that the next step would then be to determine how to populate the boxes. He explained further that land cover descriptions will add too much complexity, in that they include more than just aquatic habitats.

Baumann observed that the materials discussed to date draw out more questions to be answered. He suggested that the typical frequency of WQTF meetings may not be sufficient to address this topic, adding that conference calls may also be needed. Baumann commented that it will be important to define the work needed completely, but that the WQTF was at the point where it needed to gather more information and become more educated before setting out specific work tasks.

Reflecting on experiences in Illinois, Short cautioned that if a contactor was to be used at any point in this process, it would be important to scope the work out in as much detail as possible in advance.

Shepard observed that the approach of refining designated uses may also lead to a better "fit" with LTRMP data. He added that currently the data produced by LTRMP and EMAP-GRE are not fully used by the states, and that the designated use project may help the states better assess the potential value of these approaches and the data they generate.

Stoerker stressed that the WQTF need to reach the point of being able to "write a contract" before potentially handing the work off to another workgroup or contractor.

Baumann commented that it would be important to spend more time in subsequent WQTF meetings focusing on this issue. Good cautioned, however, that Illinois may not be in the position to dedicate much more time to the effort, noting that it took a staff of 30 people nine years in the Chesapeake Bay to develop something similar.

Baumann reflected on why the WQTF was undertaking the project, commenting that at first it was at the direction of the Executive Committee, but it has become apparent that this may be a way for the programs to better protect the Mississippi River.

Stoerker drew the attention of the WQTF back to the proposal regarding habitat-specific designated use work that had been approved by the WQTF and Executive Committee in June 2007, asking them if they still agreed that this was how they wanted to proceed. Hokanson added that moving this direction may have implications for monitoring programs.

Baumann suggested that before the next scheduled WQTF meeting, or perhaps at the next meeting, time be dedicated to hear from the LTRM and EMAP-GRE programs regarding their perspectives on River habitats and monitoring. Bolgrien suggested looking at LTRM data in addition to their sampling (habitat) strata. Sullivan agreed, but added that developing indicators remains an important need, and that this was not just a matter of looking at existing data. Bolgrien concurred that it would be important not to get bogged down in the details of LTRMP data.

Other Agency Reports and Updates

Hokanson noted three upcoming events of interest to the WQTF:

- The UMRBA Water Quality Executive Committee will be meeting in November in St. Paul. This meeting will take place in conjunction with the quarterly meeting of the UMRBA Board and will include a joint meeting of the Board and the Executive Committee.

- The National Research Council's report on the Mississippi River and the Clean Water Act is due to be released in October.

- The Water Environment Research Foundation (WERF) will be holding a webcast on October 9, 2007 to discuss their survey of the states approaches to 305(b) assessment and 303(d) listing. Olson commented that he had obtained a copy of the WERF report.

Shepard described a proposed study by the National Research Council to conduct a comprehensive study of sediment and sediment flows on the Missouri River. He provided a handout with details of the proposed study and reflected on the recent situation where there was concern in Missouri about USACE reintroducing sediment into the Missouri River as part of a habitat restoration project.

Shepard also drew the WQTF's attention to the National Surface Water Assessment, which is focused on lakes this year and will be targeting "flowing waters", including large rivers, over the next two years. He added that US EPA is looking for states as partners to assist in the fieldwork associated with the assessment. Bolgrien added that sites for the assessment had been selected.

The meeting adjourned at 12:40 p.m.